COMBINED NEWS SERVICES

M/035/015

SALT LAKE TRIBUNE July 28, 1995

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U.S. planes also have been flying as part of NATO's enforcement of a "no fly zone" over Bosnia.

Now, if Gorazde or other safe havens come under Serb attack, the U.S. role would be much bigger, military officials said, putting the United States at higher peril to suffer its first battle casualties in Bosnia.

Although warplanes from Britain, France, the Netherlands and other NATO nations would participate, the operation would be predominantly American because most of the available aircraft are American and because of the dominant U.S. presence in NATO's command structure.

■ See BOSNIA, Page A-17

order after the tribe's Ojato chapter passed two resolutions Wednesday seeking payment from Gouldings. The Ojato chapter is the tribal governing unit in the area of southeastern Utah that includes the scenic Monument Valley.

The resolutions contend: "Gouldings, which earns millions of dollars from its Monument Valley operations, has for years trespassed upon Navajo trust lands belonging to the Ojato chapter."

Gouldings' resort in-

■ See WATER WAR, A-4

# Great Salt Lake's Wildlife Faces Toxic Threat From Canal's Selenium

By Jim Woolf



Selenium levels high enough to damage wildlife have been found in a canal that flows near Kennecott's tailings pond to the Great Salt Lake.

Studies are under way to determine whether this naturally occurring element is accumulating in the lake's brine shrimp and brine flies, or the thousands of migrating birds that feed on them.

"From the preliminary results, it doesn't look like there's a problem with the birds," said Preston Chiaro, vice president of technical services at Kennecott Utah Copper. But more detailed studies are continuing.

Selenium became infamous in the 1980s when biologists found it was responsible for deformed birds and fish at the Kesterson National Wildlife Refuge in California's San Joaquin Valley. Follow-up studies found similar problems in 15 Western states, including several areas in Utah's Uinta Basin.

This widespread element is essential to animals in minute quantities, but becomes toxic to wildlife at slightly higher levels. There is evidence that selenium's damaging effects can begin at levels as low as 2 or 3 parts per billion (ppb). Levels at Kesterson topped 300 ppb.

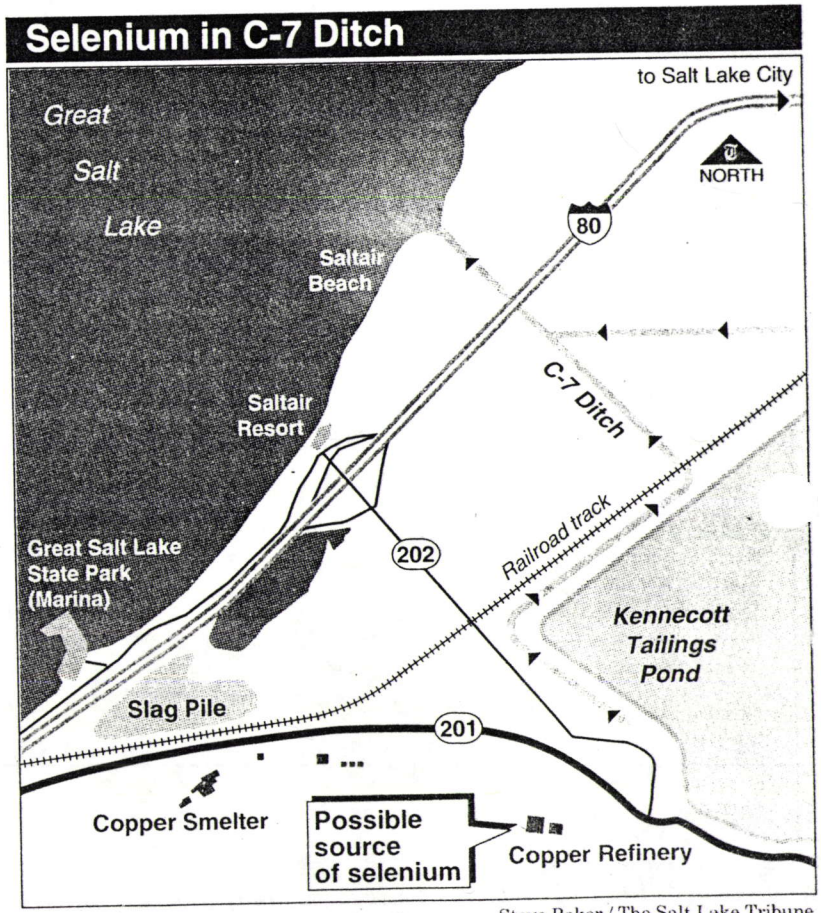
Kennecott last year discovered selenium levels of about 170 ppb in the C-7 Ditch that drains water from land surrounding the 5,700-acre tailings pond north of Magna. The canal enters the lake about a mile north of the Saltair resort. Thousands of ducks gather each winter in this part of the lake to feed in the warm, nutrient-rich water entering from the canal.

Utah's water-quality regulations protecting aquatic life allow chronic exposure to no more than 5 ppb of selenium. Short-term exposure is allowed up to 20 ppb. The Environmental Protection Agency's recommended limit for selenium discharges to the ocean is 71 ppb.

Kennecott's 170 ppb selenium level is "extremely high," said Mike Saiki, a fishery biologist for the National Biological Service who helped investigate the problems at Kesterson. "Ecological damage has been reported at levels far lower than that."

"It concerns me," said Catherine Quinn, terrestrial-wildlife program coordinator for the Utah Division of Wildlife Resources. "I don't know what effect it will have."

■ See LAKE, Page A-6




Steve Baker / The Salt Lake Tribune

The Salt Lake Tribune,
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# Lake's Wildlife Faces Toxic Threat

■ Continued from A-1

The Great Salt Lake is an important feeding and resting area for hundreds of thousands of migrating shorebirds, such as Wilson's and red-necked phalaropes, snowy plovers, American avocets and black-necked stilts. It is one of about 15 areas in North, Central and South America to be included in the Western Hemisphere Shorebird Reserve Network.

Kennecott is conducting an "ecological-risk assessment" that looks at selenium levels in the water, soil and animals living in and around the ditch and the area where it enters the lake. Biologists also are checking bird nests in the area to monitor reproductive success.

The presence of elevated selenium levels does not automatically mean there will be an environmental effect, said Chiaro, noting other chemicals in the water can affect its toxicity. No one has studied how selenium behaves in an environment as salty as the Great Salt Lake.

He stressed that there is no risk to human health because no one drinks the ditch water.

**The Selenium Source?** Kennecott's environmental experts believe the contamination came from water that leaked from their old copper refinery, located at the northern tip of the Oquirrh Mountains near the long-abandoned town of Garfield.

Chiaro said selenium is a normal part of copper ore dug out of the Bingham Canyon Mine. It is concentrated along with the other metals before being dropped out in the waste water at the refinery. The selenium later is recovered from the water and sold to industrial customers.

However, Chiaro said the old refinery apparently had cracks in its foundation that allowed some of the contaminated water to leak into the soil and reappear in nearby wells that drain into the C-7 Ditch. Groundwater monitoring has shown high levels of selenium beneath the refinery and a plume of contaminated groundwater moving toward the lake.

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finery has been sealed and a leak-detection system installed to avoid this sort of problem.

If ongoing studies find that selenium is damaging wildlife, Chiaro said Kennecott is prepared to clean up the spill. The contaminated water could be pumped from the ground and then treated or recycled into Kennecott's operations.

"But if we don't find any adverse health effects on the wildlife, we'd be hard pressed to understand why anything should be done," he said.

Although Kennecott quietly has been studying the situation for about a year, there was little public discussion of the selenium problem until this summer when the company released a draft environmental-impact statement on its proposal to enlarge the tailings pond. This would divert some of the other tributaries to the C-7 Ditch, resulting in less dilution of the selenium entering the lake.

"Increasing the selenium concentrations in the C-7 Ditch, even if the total amount of selenium reaching the Great Salt Lake does not change, will increase the risk of selenium toxicosis to migratory birds feeding in the area because selenium levels already appear to exceed toxicity thresholds for wildlife," wrote Robert Stewart in the Interior Department's comments on the environmental study. Stewart is regional environmental officer for the department's Office of Environmental Policy and Compliance in Denver.

Federal and state biologists worry that selenium also could be a problem in the 2,500-acre nature preserve that Kennecott proposes to develop just north of Interstate 80 to compensate for wetlands lost by expansion of the tailings pond.

"The mitigation project needs to be evaluated carefully to ensure that enhancement of wetland units through addition of water does not aggravate any existing selenium problems or attract water birds into areas containing hazardous levels of selenium," wrote Stewart.

Chiaro said stagnant water in some of the ponds in the proposed preserve contains between 20 and 30 ppb selenium. However, water that Kennecott proposes to divert into the area to create marshes and additional lakes contains no selenium and should flush out any contaminated water, he said.

Kennecott's groundwater studies also have found a zone of high arsenic contamination around the copper smelter. Chiaro said studies are under way to determine whether this is from old spills or is a natural phenomenon.

M/035/015